ABSTRACT OF THE DISCLOSURE

Disclosed is a method of preparing a thiohydrazide product compound from a hydrazide starting compound. The hydrazide starting compound is represented by Structural Formula (I):

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$$R_1$$
 N
 R_2
 N
 R_{10}

(I).

The thiohydrazide product compound is represented by Structural Formula (II):

$$R_1$$
 S R_2 N R_5 R_{10}

(II).

In Structural Formulas (I)-(II), R₁ and R₂ are independently an aliphatic group, a substituted aliphatic group, an aryl group or a substituted aryl group, or R₁ and R₂ taken together with the carbon and nitrogen atoms to which they are bonded, form a non-aromatic heterocyclic ring optionally fused to an aromatic ring. When R₂ is an aryl group or a substituted aryl group, then R₅ is a hydrazine protecting group; and when R₂ is an aliphatic or substituted aliphatic group, then R₅ is -H or a hydrazine protecting group. R₁₀ is -H or a substituted or

unsubstituted alkyl group. The method comprising the step of reacting the starting compound with a thionylating reagent.